

X-ray scattering, solid state ¹³C NMR, and UV-visible spectroscopy.
REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 19 CAPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2001:463322 CAPLUS
DOCUMENT NUMBER: 135:62745
TITLE: Articles coated with **sol**-gel oxides and
production methods therefor
INVENTOR(S): Kamiya, Kazutaka; Yamamoto, Hiroaki
PATENT ASSIGNEE(S): Nippon Sheet Glass Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001172573	A2	20010626	JP 1999-359380	19991217

AB Oxide coatings contain alkylene groups. Thus, glass was coated with a
soln. contg. tetraethoxysilane 3.4, bis(triethoxysilyl)methane 0.034, HCl
2, and ethanol to 100 g.

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ACCESSION NUMBER: 2001:183293 CAPLUS
DOCUMENT NUMBER: 135:12013
TITLE: Rapid prototyping of patterned multifunctional
nanostructures
AUTHOR(S): Fan, Hongyou; Lopez, Gabriel P.; Brinker, C. Jeffrey
CORPORATE SOURCE: The Advanced Materials Laboratory, Sandia National
Laboratories, The University of New Mexico/NSF Center
for Micro-Engineered Materials, Albuquerque, NM, USA
SOURCE: Mater. Res. Soc. Symp. Proc. (2001), 624 (Materials
Development for Direct Write Technologies), 231-240
CODEN: MRSPDH; ISSN: 0272-9172
PUBLISHER: Materials Research Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The ability to engineer ordered arrays of objects on multiple length
scales has potential for applications such as microelectronics, sensors,
waveguides, and photonic lattices with tunable band gaps. Since the
invention of surfactant templated mesoporous sieves in 1992, great
progress has been made in controlling different mesophases in the form of
powders, particles, fibers, and films. To date, although there have been
several reports of patterned mesostructures, materials prepd. have been
limited to metal oxides with no specific functionality. For many of the
envisioned applications of hierarchical materials in microsystems,
sensors, waveguides, photonics, and electronics, it is necessary to define
both form and function on several length scales. In addn., the patterning
strategies utilized so far require hours or even days for completion.
Such slow processes are inherently difficult to implement in com.
environments. We present a series of new methods of producing patterns
within seconds. Combining **sol**-gel chem., Evapn.-Induced
Self-Assembly (EISA), and rapid prototyping techniques like pen lithog.,
ink-jet printing, and dip-coating on micro-contact printed substrates, we
form hierarchically organized silica structures that exhibit order and
function on multiple scales: on the mol. scale, functional org. moieties
are positioned on pore surfaces, on the mesoscale, mono-sized pores are
organized into 1-, 2-, or 3-dimensional networks, providing size-selective
accessibility from the gas or liq. phase, and on the macroscale,